

# **BREOX FMT 30**

## **INTRODUCTION**

**BREOX FMT 30** is a cost-effective performance anti-foam with the significant added benefits, over more traditional antifoams, of improved processing and yields in microbiological fermentation applications. It is also suitable for use in aqueous systems requiring an anti-foam which will operate specifically at temperatures around 30°C, for example warm water wash circuits, bottle wash formulations etc.

## **APPLICATION**

**BREOX FMT 30** has been specifically developed for use in microbiological fermentations. FMT 30 is generally better tolerated by most micro-organisms than silicones or standard polyalkylene glycols, though for each individual case this should be confirmed. Another common problem associated to polyalkylene glycols and silicones is ultra-filtration at low temperatures. FMT 30 is soluble in water below 25°C and as a result, should not block membranes should ultra-filtration be required at this temperature. FMT 30 is also stable to conventional sterilisation conditions.

**BREOX FMT 30** is also readily removed from fermentation vessels and does not show any tendency to accumulate on the surfaces. Any traces of residual FMT 30 can be washed away with cold water.

**BREOX FMT 30** can be readily removed from solution through the use of high surface area polystyrene absorbent. This is only suitable however, in circumstances where the resin does not remove any other materials present.

The preferred method of addition of this product is as a solution in cold water, or as a dispersion that has been prepared in cold water. A recommended level is 5% in water at between 10 and 15°C. This product can also be added neat if required

## **TYPICAL PROPERTIES**

The typical values presented overleaf are believed to be accurate, they should not however be considered to constitute a specification.

<b>Physical Attribute</b>	<b>Analysis Method</b>	<b>Value and Unit</b>
Soluble in	-	Alcohols, Ketones, Kerosine, Cold Water
Insoluble in	-	Hot water
Flash Point (COC)	ASTM D 92	>200°C
Cloud Point (1% aqueous)	ASTM D2500	25°C
Pour Point	ASTM D 97	<-25°C
Boiling Point	ASTM D2887	>250°C
Specific Gravity	ASTM D1298	1.020 g/cc

## **DISSOLVED OXYGEN TESTING**

**BREOX FMT 30** has been tested on many fermentation systems where it can allow dissolved oxygen levels to be maintained (a problem that can be associated with other types of anti-foam.) It also exhibits less of an affect on oxygen transfer from the nutrient broth to the micro-organism. Due to this factor foam formation during fermentation can be controlled with **BREOX FMT 30** without dramatically reducing the yield of the final product.

## **SHAKER TEST**

**BREOX FMT 30** was tested in a rotary shaker at 240rpm at a dosage of 10,000ppm (which represents a substantial overdose) in a variety of fermentations including penicillin, streptomycin, lincomycin, erythromycin, L-lysine and citric acid.

Test 1 – 500cm<sup>3</sup> Erlenmeyer flask, 50cm<sup>3</sup> medium broth.

<b>Antifoam</b>	<b>O2 Concentration</b>	<b>Final Antibiotic concentration</b>	<b>%Yield</b>
BLANK	Not less than 40%	700µg/mg <sup>-1</sup>	100%
FMT 30	Not less than 36%	685µg/mg <sup>-1</sup>	98%
Tall Oil	Not less than 36%	450µg/mg <sup>-1</sup>	64%

NB. Tall Oil – 50% blend of FMT 30 (35%) and block co-polymer (15%)

Test 2 – 21cm<sup>3</sup> Erlenmeyer flask, 200cm<sup>3</sup> medium broth.

Antifoam	O2 Concentration	Final Antibiotic concentration	%Yield
BLANK	Not less than 35%	650µg/mg <sup>-1</sup>	100%
FMT 30	Not less than 32%	625µg/mg <sup>-1</sup>	97%
FMT 30 (35%) TOFA (50%) co-polymer (15%)	Not less than 32%	403µg/mg <sup>-1</sup>	63%

## Remarks

### Handling & Safety:

A material Safety Data Sheet (MSDS) has been issued describing the health, safety and environmental characteristics of BREOX FMT 30 together with handling precautions and emergency procedures. This must be consulted and fully understood before storage, handling and use.

### Storage:

## Revision-No.

2.2-08.2004 Effective August 17, 2004

The product can be stored for at least 2 years at ambient storage conditions and temperature without any deterioration.

---

All products in the text marked with an © are trademarks of the Cognis group.

The information on product specifications provided herein is only binding to the extent confirmed by Cognis in a written Sales Agreement. COGNIS EXPRESSLY DISCLAIMS ANY RESPONSIBILITY FOR THE SUITABILITY OF THE PRODUCTS FOR ANY SPECIFIC OR PARTICULAR PURPOSES INTENDED BY THE USER. Suggestions for the use and application of the products and guide formulations are given for information purposes only and without commitment. Such suggestions do not release Cognis' customers from testing the products as to their suitability for the customer's intended processes and purposes. Cognis does not assume any liability or risk involved in the use of its products as the conditions of use are beyond its control. The user of the products is solely responsible for compliance with all laws and regulations applying to the use of the products, including intellectual property rights of third parties.

Cognis Performance Chemicals UK Ltd - Charleston Industrial Estate,  
Hardley, Hythe, Southampton, SO45 3ZG, UK - Phone +44 (0) 2380 894666  
- Fax +44 (0) 2380 234113

F\_S

